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host the

# 16<sup>th</sup> symposium



**on Human Factors in  
Aviation Maintenance**

**April 2-4, 2002 • Hyatt Regency  
San Francisco, CA • USA**

## PROCEEDINGS

*"Enhancing  
Human  
Performance"*

Co-sponsored by...

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Day 1 - Tuesday, April 2

8:45 - 9:15

Welcome and Introduction

Ms. Jean Watson, Program Manager of Maintenance Human Factors, FAA  
Master of Cermonies: Dr. Bill Johnson, Regional Director for North & Latin America, Lufthansa Technical Training

9:15 - 9:45

Keynote Address

Mr. Larry Slade, General Manager of Engineering and Chief Engineer, United Airlines

HUMAN PERFORMANCE AND INSPECTION PROCESSES

Chairperson - Dr. Bill Johnson, Lufthansa Technical Training

9:45 - 10:15

Session Overview and

Visual Inspection Reliability: What We Know and Why We Need To Know It

[PRESENTATION] [PAPER]  
Professor Colin G. Drury, University at Buffalo, State University of New York

10:15 - 10:45

Break

10:45 - 11:15

Finding Human Performance Patterns in Safety Data

[PRESENTATION] [PAPER] [GRAPHS]  
Dr. Jose Blanco, Centre for Research in Human Development, Laurentian University

11:15 - 11:45

A Human Performance Centered Approach to Operational Excellence

[PRESENTATION]  
Mr. Charles Alday, Operational Excellence Manager, Colonial Pipeline

12:00 - 1:30

Lunch with Speaker -

Be Alert! Ensuring Safety in a 24/7 Maintenance & Engineering Environment [ARTICLE] [ARTICLE]  
Dr. Mark Rosekind, President & Chief Scientist, Alertness Solutions

FITNESS FOR DUTY TO ENHANCE HUMAN PERFORMANCE

Chairperson - Mr. David Hall, Deputy Regional Manager Heathrow, CAA

1:30 - 3:00

Alertness Research Findings & Regulatory Comments

Ms. Jacqueline Booth-Bourdeau, Sr. Technical Programs Manager, [PRESENTATION]  
Transport Canada  
Mr. David Hall, CAA  
Dr. Bill Johnson, Lufthansa Technical Training. [PAPER]  
Dr. Wayne Rhodes, President, Rhodes & Associates  
Mr. Les Vipond, Aviation Safety Inspector, FAA

3:00 - 3:30

Break

3:30 - 4:00

Occupational Fitness for the Aviation Maintenance Technician

[PRESENTATION] [PAPER] [CHART]  
Dr. James Allen, MD, MPH., Naval Occupational Health Center

4:00 - 4:30

Occupational Biomechanics and Preventing Occupational Injuries

Dr. Stephen M. Grennan, Director of Occupational Biomechanics, Body Response, Inc.

5:30 - 7:30

Evening Reception

Day 2 - Wednesday April 3

HUMAN PERFORMANCE TOOLS

Chairperson - Dr. Barbara G. Kanki, Senior Research Associate,  
NASA Ames Research Center

8:30 – 9:00

Proactive Safety Assessment [PAPER]  
Professor Gary Eiff, Purdue University

9:00 – 9:30

HFACS for Incident Reporting  
Capt. John Schmidt, PhD, Naval Safety Center

9:30 – 10:00

Risk Analysis [PAPER] [PRESENTATION] [GRAPH]  
Dr. James T. Luxhoj, Rutgers University

10:00 – 10:30

Break

10:30 – 11:00

Tools for Continuous Improvement [PAPER] [PAPER]  
Mr. Declan O'Shea, VP and General Manager (Dublin), FLS Aerospace

11:00 – 11:30

Current Approaches to Assessing Risk in Maintenance and Inspection [PAPER]  
Dr. Barbara G. Kanki, NASA Ames Research Center

11:30 – 12:00

An Integrated Systems Approach to Human Factors Programs in Commercial  
Aviation Systems [PAPER]  
Mr. Steve Sogg, METS Human Factors, The Boeing Company

12:00 – 1:30

Lunch

MAINTENANCE DOCUMENTS AND DATA

Chairperson - The Honorable John Goglia, Member, NTSB

1:30 – 1:45

Introductory Comments  
Mr. John Goglia, NTSB

1:45 – 2:15

Maintenance Documentation - A UK Perspective [PAPER] [PRESENTATION]  
Mr. David Hall, CAA

2:15 – 2:45

Documentation In Canada [PRESENTATION]  
Mr. Brian Whitehead, Chief of Policy Development, Transport Canada  
Mr. Bernie Adamache, Director, Systems & Line Maintenance, Air Canada

2:45 – 3:15

Break

3:15 – 3:45

Human Factors in Aviation Maintenance Technical Documents [PRESENTATION] [PAPER] [CHARTS]  
Professor Alex Chaparro, Wichita State University

3:45 – 4:15

Document Challenges in Repair Station Environments [PRESENTATION] [PAPER]  
Mr. Tim Killion, Project Manager, Goodrich Aviation Technical Services

Day 3 - Thursday April 4

Interactive Workshop Day

In order to create smaller groups of participants, and thereby maximize opportunities for interactivity, Day 3 will be divided into 3 parallel sessions: Sessions A and B will meet for the full day while Session C will last for 3 hours and be repeated for a new group of attendees in the afternoon. Thirty minute breaks are scheduled for 10:00am and 2:00pm.

Interactive Session A - Full Day

HUMAN PERFORMANCE TOOLS

Chairperson - Dr. Barbara Kanki, NASA Ames Research Center

8:30 – 4:30

Speakers:

- Dr. William Rankin, Technical Fellow, The Boeing Company
- Mr. Steve Sogg, The Boeing Company
- Capt. John Schmidt, Naval Safety Center
- Professor Gary Eiff, Purdue University
- Mr. Des Gaynor, Organisational Learning Manager, FLS Aerospace [PAPER] [PAPER]

Interactive Session B - Full Day

MAINTENANCE DOCUMENTATION/DATA

Chairperson - Mr. John Stelly, Managing Director of Technology, Continental Airlines

8:30 – 4:30

Speakers:

- Mr. David Hall, CAA [PRESENTATION]
- Mr. Brian Whitehead, Transport Canada [PRESENTATION]
- Mr. Bernie Adamache, Air Canada
- Professor Alex Chaparro, Wichita State University
- Mr. Tim Killion, Goodrich Aviation Technical Services
- Mr. Jeffrey L. Wampler, Systems Engineer, Human Effectiveness Directorate, Air Force Research Laboratory [PRESENTATION] [PAPER] [.PPS SLIDESHOW] [.AVI MOVIE]
- Mr. John Stelly, Continental Airlines

Interactive Session C

TRAINING & CERTIFICATION

Chairperson - Professor Mike Kroes, Purdue University

8:30 – 11:30

Speakers:

- Ms. Heike Roettgering, Head of Consulting and Operational Training, Lufthansa Technical Training [PRESENTATION]
- Mr. Dave Hanson, M.S., Program Manager, MX Human Factors Training, Boeing Training International [PRESENTATION] [PAPER]
- Mr. Raymond Goldsby, Aviation Industry Advisor [PRESENTATION]
- Professor Anand K. Gramopadhye, Associate Editor, Int. Journal of Industrial Ergonomics, Clemson University [PRESENTATION] [PAPER]

11:30 - 1:00

Lunch - Closing Speech

Mr. Jim Ballough, Director of Flight Standards Service, FAA

1:00 – 4:00

Repeat of Morning Session C



**Charles Alday**

Charles Alday is Operational Excellence Manager with Colonial Pipeline Company, whose headquarters is in Atlanta, Georgia. Colonial Pipeline Company is a refined products pipeline that originates in Houston, Texas and terminates in Newark, New Jersey. The company ships gasoline, fuel oil, kerosene, and jet fuel to various points from Texas to New York.

Charles has worked for Colonial for 27 years and has worked in the pipeline industry for 36 years. Charles has experience in pipeline construction, operations, maintenance, and management. For the past three years, he has worked with other persons in Colonial's Operational Excellence program — designed to eliminate pipeline leaks, spills, and errors.

His primary responsibilities are the Conduct of Operations, Lessons Learned program, Incident Management, Performance Measures, and Organizational Development activities. Charles also serves on many cross-functional teams and as a leadership and teamwork coach/consultant at Colonial.

Charles is a graduate of Belmont University in Nashville, Tennessee with a BBA degree in Accounting and a BA degree in Philosophy. He also has a Seminary Extension degree in Educational Ministries. In May of 1999, he received an MBA degree from Kennesaw State University.

Charles has been married for 31 years to his wife, Charlotte. They have two adult sons. Charles and Charlotte work with teenagers at First Baptist Church of Marietta, Georgia.

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**James W. Allen MD, MPH**

Dr. Allen is one of the few physicians trained and practicing in the specialty of occupational and environmental medicine. He has over twenty years experience in the delivery of occupational medical care at industrial facilities including Navy shipyards and air rework facilities. These experiences give him first hand familiarity with the regulatory and safety issues facing those who manage aviation and other industrial facilities.

He has developed special expertise in disability evaluation and holds the qualification as a Certified Independent Medical Examiner. For two years he wrote the monthly column "From the Medical Department" which appeared in the newsletter for the Professional Aviation Maintenance Association. Other articles have appeared in aviation maintenance magazines. Dr. Allen is an Aviation Medical Examiner and Certified Flight Instructor.

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**James J. Ballough**

Jim Ballough joined the Federal Aviation Administration in August 1986. Jim was appointed Director of Flight Standards Service in December 2001. With more than 27 years of aviation experience, Jim leads an organization of more than 4,500 safety inspectors and other aviation professionals. His main focus is to set safety standards for the aviation industry and oversee regulatory compliance.

Prior to his appointment as the Director, Flight Standards Service, AFS-1, he served as the Acting Manager, Continuous Airworthiness Maintenance Division, AFS-300, at Washington Headquarters. He was responsible for regulation and policy development regarding the certification, inspection, and surveillance aspects of air carrier and commercial operators, airmen, and air agencies including aviation maintenance technician schools and repair stations. This division is responsible for the development of national policies, standards, systems, procedures and program plans as they relate to aircraft maintenance.

Prior to joining the Headquarters Division, he served in FAA Eastern Region positions including the Division Manager, Assistant Division Manager, and Technical Branch Manager. His duties included overall responsibility for 14 field offices, 4 international field offices, and 45 regional employees. The Eastern region represents aviation interests in 7 Eastern states, and 43 foreign countries throughout Europe, Africa, and the Middle East.

He also held positions as a Supervisory Principal Maintenance Inspector, Pittsburgh Flight Standards District Office. He supervised a staff of 22 Inspectors. As the Principal Maintenance Inspector he was assigned the oversight responsibilities of US Airways, a FAR Part 121 air carrier. He has held positions as a program manager Boeing 737, 757, and 767 aircraft. During his tenure at the Pittsburgh office he has served on a number of national committees, and has been an advocate of Human Factors and the role they play in aircraft maintenance. Working with person-

nel from US Airways and the International Association of Machinists and Aerospace Workers (IAMAW) he promoted and participated in the development and implementation of the Maintenance Resource Management (MRM) training programs at US Airways.

Jim joined the Federal Aviation Administration in August of 1986. Prior to his career in the FAA he worked as a mechanic for Eastern Airlines, Miami Florida. During his career at Eastern, he held a variety of positions throughout the maintenance organization. Before Eastern, Jim was Honorably discharged from the United States Army in 1973.

Jim is a holder of a FAA mechanic certificate with an Airframe and Powerplant rating. He has studied at Embry-Riddle Aeronautical University, Harvard University – Kennedy School of Government, Florida Atlantic University and the Pittsburgh Institute of Aeronautics.

Jim is married, with two children. His hobbies include golf, skiing, reading, and a variety of computer related activities.

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**Dr. Jose Blanco**

Dr. Blanco is the principal of Blanco & Miahle Associates, an independent consulting firm in Sudbury, Ontario, specializing in organizational efficiency. Dr. Blanco has a Ph.D. Chemical Engineer with about 30 years of experience in industrial R&D, production, plant management and executive positions; he retired in 1994 as a vice-president, Human Resources, Safety, Environment and Administration in the Ontario Division of INCO Limited.

Dr. Blanco has actively worked in the area of safety and productivity at the operational, management and academic levels. He is an active member of the Industrial Health, Safety and Productivity Group at Laurentian University and has published a number of papers in the area of safety management and productivity. Most recently, he was instrumental in developing an MBA course on safety management and initiating a 2-year research project on assisting line management to prevent accidents.

Among his organizational management activities, Dr. Blanco contributed to the development and diffusion of the Conference Board of Canada's Employability Skills Profile; he did board and committee work at regional, provincial and national levels and was Chairman of the Board of Directors of the Royal Canadian Mint, a commercial Crown corporation, from 1996-1999.

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**Jacqueline Booth-Bourdeau**

Jacqueline is a Senior Technical Program Manager with Transport Canada's Aircraft Maintenance and Manufacturing Branch. She is responsible for human factors and safety management issues affecting aircraft maintenance including the development of regulations, standards and guidance materials in these areas. Jacqueline's current projects include the production of joint advisory material supporting the implementation of safety management system regulations in flight operations and maintenance organizations.

Jacqueline is involved with a study reviewing the hours of work and working conditions of aircraft maintenance personnel. She is the chairperson of the Canadian Aviation Regulation Advisory Committee (CARAC) Part V Working Group looking at The Impact of Fatigue on Aircraft Maintenance Personnel in the Canadian aviation Industry and is co-chair of the CARAC Part I working group on Voluntary and Non-Punitive Reporting Programs.

Jacqueline holds Bachelor's and Master's degrees and is currently studying aviation safety and safety management systems.

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**Alex Chaparro PhD**

Alex Chaparro PhD, received his PhD in Experimental Psychology/Human Factors from Texas Tech University in 1990. In 1996, after completing a Postdoc at Harvard University he accepted position in the human factors program at Wichita State University. He is an Associate Professor of Psychology and is a fellow of the National Institute of Aviation Research at Wichita State University.

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### **Colin G. Drury**

Originally a physicist, Dr. Drury became a human factors engineer with a Ph.D. was in Engineering Production at Birmingham University. He was Manager of Ergonomics at Pilkington Glass in the UK running a successful human factors effort, moving from there to become Professor of Industrial Engineering at the State University of New York at Buffalo, USA. His published papers number over 200, with an emphasis on human reliability applications.

Since 1990 he has headed a team at SUNY at Buffalo investigating human factors in inspection and maintenance of civil aircraft. He is also Vice President of Applied Ergonomics Group Inc. His major awards include the Sir Frederick Bartlett Medal of the Ergonomics Society, the Paul Fitts Award of the Human Factors and Ergonomics Society, the NAMTAC Project of the Year award (twice), and the IIE Ergonomics Division Award. He holds a private pilot's licence.



### **Des Gaynor**

Des is Organisational Learning Manager for FLS Aerospace, formerly the maintenance division of Aer Lingus the national carrier of Ireland.

He began working in aviation 30 years ago while completing a Bachelor of Science and Masters degree in management from Trinity College Dublin. His experience started in Technical Operations as a licensed Aircraft Maintenance Engineer, working a wide variety of aircraft maintenance positions.

As Training Executive he has extensive knowledge of the Technical Training and Staff Development functions within a maintenance organisation. Des has managed and conducted a range of training projects for a number of World airlines and is a member of IATA International training faculty.

Des currently holds responsibility for the Human Factors program to develop, manage and maintain initiatives in conjunction with the European industry and is involved with a number of EU funded Research and Development programmes with Airlines, Manufactures and research institutions partners, these include the following projects:

ADAMS (Aircraft Dispatch and Maintenance Safety)  
STAMINA (Safety Training in Aircraft Maintenance Industry)  
AMPOS (Aircraft Maintenance Procedures Optimisation systems)  
AITRAM (Advanced Integrated Training in Aeronautics Maintenance)

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### **John J. Goglia**

John Goglia is an internationally recognized expert in aviation maintenance and aircraft operations. First sworn in as a Member of the U. S. National Transportation Safety Board in August 1995, he was reconfirmed as a Member in May 2000.

He is the first working A&P mechanic to serve on the Safety Board, with over thirty years of aviation experience. Before his Senate confirmation, he was based with USAir and was the recipient of the prestigious 1994/Industry Aviation Mechanic of the Year Award.

With a wealth of experience, Member Goglia is a leading advocate regarding the evaluation of human factors in the aviation workplace. He developed the Maintenance Resource Management Program, combining management, labor, regulatory agencies and academia into what has become the premier human factors program in aviation maintenance.

Mr. Goglia served as the Governor's appointee to the Massachusetts Workers Compensation Board and to the Boston Area Second Airport Site Selection Board. Mr. Goglia served as Team Coordinator of the International Association of Machinists and Aerospace Workers' (IAM) Accident Investigation Team and for over 21 years he served as the IAM's Flight Safety Representative.

He was the IAM's principle specialist on aviation issues, service as liaison to the FAA, NTSB, DOT and other executive branch agencies as well as the U. S. Congress. He represented the IAM on the aviation Rulemaking Advisory Committee, which evaluates and recommends changes regarding aviation safety and operational regulations.

Member Goglia served as Chair and a founding member of the National Coalition for Aviation Education, an aviation industry organization that advances aviation education among America's youth and aviation workforce. He was an original member of the Steering Committee to establish International Society Aviation Maintenance Professionals, a professional society dedicated to advanced safety and professionalism throughout the aviation maintenance industry. He is an internationally known speaker and author addressing aviation safety issues, lec-



turing at world symposiums and serving as contributing editor to several industry periodicals. In 1960, John learned to fly in a Piper J2-J3 and, for over ten years, he was owner/operator of an aircraft service company.

Mr. Goglia was the Member of scene for the Safety Board's investigation of the grade crossing accident in Fox River Grove, Illinois in October 1995 that killed 7 highschool students on a schoolbus. In January 1996, he chaired a briefing for government and industry representatives regarding the problem of ingestion of birds in the new generation of air carrier engines. Member Goglia's term expires on December 31, 2003.

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**Raymond P. (Ray) Goldsby**

Currently operating as an independent Aviation Industry Advisor, Mr. Goldsby's aviation career spans over 44 year of maintenance operations; including both production and training management. He began his career at age 17 as a mechanic's helper in remote site helicopter operations, then to the airlines a year later, advancing within the maintenance organization to department director level at a major US air carrier. His 3 years of military service was in US Army Aviation as an Instructor. Ray's primary career focus has been in the maintenance-training arena.

He's been involved in key industry activities; having served on the FAA Pilot and Aviation Maintenance Technician Shortage Blue Ribbon Panel (Chair of AMT Activities), and FAR Part 65/66 ARAC. He remains active in the ATA Maintenance Training Sub Committee (Former Chair), ATEC Board of Directors, the Northrop Rice Foundation Board, the San Jose State University Aviation Advisory Council, and is a member of PAMA.

Mr. Goldsby participated in developing ATA Specification 104, Guidelines for Aircraft Maintenance Training and the Training Section of Human Factors Guide for Aviation Maintenance. He has authored reports based upon his work for the FAA including: Training and Certification in the Aircraft Maintenance Industry (1997), Comparative Study of Personnel Training and Qualifications at Aviation Maintenance Facilities (1998), Improving Operations and Oversight of Contract Maintenance (1999), Evaluation of Military AMT Training and Civil Certification Requirements (2000). The recently completed Optimization of FAR Parts 65 and 147 is currently under review and evaluation by the FAA. He continues a contract marketing role with FlightSafety International as Director-Training Business Development.

As an "earn while you learn student," he has completed four years of college, holds an Associates Degree in Business Management and a FAA Airframe and Powerplant Mechanic Certification.

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**Dr. Anand K. Gramopadhye**

Dr. Gramopadhye is professor of Industrial Engineering at Clemson University, South Carolina and associate editor of the International Journal of Industrial Ergonomics. His research is focused in the areas of modeling humans in quality and process control systems, inspection, aviation human factors and issues related to the use of advanced technology in solving human-machine systems design problems in aviation and manufacturing systems. He has published over 100 papers on the above topical areas and his research has been funded by various private and federal sources. He is a member of IIE, ASQ and HFES.

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**Dr. Stephen M. Grennan**

Dr. Grennan recognized a need for a more specific way to help the "Industrial Athlete" reduce injuries and help companies reduce costs. The Bureau of Labor Statistics states that back injuries account for one of every five injuries and illnesses in the workplace. Eighty percent of these injuries occur to the lower back. What are we doing about it? Would a professional athlete play his or her sport without having his body prepared? Learn from Dr. Grennan how to educate your people as to why it is important to prepare themselves. See how his program has made a big impact in several industries and how it can be applied in the aviation industry.

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**David Hall**

David started his career in aviation as an apprentice aircraft technician with BOAC and after 10 years as a Licensed Aircraft Engineer he moved to Kuala Lumpur to work for Malaysian Airline System until joining the CAA in 1984 as an Airworthiness Surveyor.

David is currently the Deputy Regional Manager Heathrow, Aircraft Maintenance Standards Department in the Safety Regulation Group of the Civil Aviation Authority. In January 1993 he was given the responsibility for co-ordinating the CAA's efforts to address Human Factors in aviation maintenance. He is currently a member of the JAA Maintenance Human Factors Working Group which is developing new human factors requirements for inclusion in JAR 145.

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**Dave Hanson M.S.**

Dave got his start in aircraft maintenance working avionics on Marine Corps fighters in the early 70s. He then went on to earn a Masters Degree in Vocational Education followed by seven years as a high school vocational instructor. Dave returned to aviation as a 777 avionics instructor for FlightSafetyBoeing.

In 1997, Dave headed up a team to develop a Human Factors training program for FSB. Dave now serves as the Program Manager and travels worldwide doing HF training.

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**Dr. William B. Johnson**

Bill Johnson has a unique combination of qualifications. He is an Aviation Maintenance Technician, a pilot for 30 years, and a Ph.D. He has also served as a Designated Mechanic Examiner for the FAA and a Professor at the University of Illinois Institute of Aviation. Johnson has spent the past 20 years as a Senior Executive, including Director, Vice President and Chief Technology Officer for engineering companies specializing in Technical Training and Human Factors. Working with Galaxy Scientific Corporation, from 1989 to 2001, Bill was the Contractor Manager of the FAA's Human Factors in Aviation Maintenance research program.

Dr. Johnson is the Regional Director for North and Latin America for Lufthansa Technical Training. Lufthansa Technical Training offers a wide range of aviation maintenance training from basic skills training to management training for Senior Executives. LTT type-specific training covers all modern jetliners.

Dr. Johnson is a member of the International Society of Air Safety Investigators and the Human Factors and Ergonomics Society. He has published over 100 articles related to application of information systems to job aiding and training in technical environments.

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**Dr. Barbara Kanki**

Barbara Kanki, a Research Psychologist at NASA Ames Research Center for over 16 years, received a Ph.D. in Behavioral Sciences from the University of Chicago. She has conducted crew factors research in both aviation and space systems; from flight crew communications and Crew Resource Management, to crew issues in ATC, maintenance, and space shuttle processing. Customer collaborators include NASA, the FAA, the National Transportation Safety Board (NTSB), as well as airline, military, manufacturer and union organizations.

She is the technical manager of maintenance human factors research under the NASA Aviation Safety Program, and conducts research in several other NASA (Engineering Complex Systems, Human Reliability) and FAA-sponsored (Air Transportation Human Factors) programs. She has performed communication analyses in support NTSB investigations, and has recently served on assessment teams for space shuttle ground operations.

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**Tim Killion**

An alumni of Colorado Aerotech, Mr. Killion acquired his A&P License in 1989. A veteran of the United States Air Force, he served as a Jet Engine Technician followed by lead participation in the Boeing MEDA Investigator Training.

During the twelve plus years of employment with Goodrich, Tim's positions have included Maintenance Mechanic/Supervision, Quality Control Inspection/Supervision, and Quality Assurance Liaison. As a member of Goodrich's Quality Assurance Team, Tim performed an integral role in the development and implementation of the Goodrich Error Management Program. Currently Tim is assigned as the Project Manager, Goodrich Aviation Technical Services overseeing the development and revision of maintenance routine task cards for an air carrier.

**Dr. James T. Luxhøj**

Dr. James T. Luxhøj is Associate Professor of Industrial and Systems Engineering at Rutgers University. In 1994-95 and Fall 2001 he was a Visiting Professor at Aalborg University in Denmark. He received his Ph.D. in industrial engineering and operations research from Virginia Polytechnic Institute and State University in 1986. He has been involved in aviation systems analysis over the past 12 years. He served as the Principal Investigator on a Federal Aviation Administration (FAA) research grant to develop an intelligent decision support system for aviation safety analysis and is currently serving as the Principal Investigator to develop analytical methods for aviation safety risk modeling, assessment, and management. Jim is the former Co-Chair for the international GAIN Working Group B: Analytical Methods and Tools and has served as the Co-Chair of the FAA's recent National Workshops on Risk Analysis and Safety Performance Measurement in Aviation. Jim is also serving as a Co-Chair of an FAA Working Group on organizational factors in aviation. He has published extensively on topics such as risk analysis, reliability and maintenance modeling, econometric modeling, and decision support systems.

Dr. Luxhøj serves as a Department Editor for IIE Transactions on Operations Engineering, and as Associate Editors for Journal of Design and Manufacturing Automation and the Journal of Engineering Valuation and Cost Analysis. Jim resides in Somerset, New Jersey with his wife and two children.



**Declan O'Shea**

Group Vice President and General Manager Dublin

Declan O'Shea joined Aer Lingus as a Trainee Avionics Engineer in 1978. Since then he has held several senior positions in the company including Line Maintenance Manager and Base Maintenance Manager.

He now holds the position of Group Vice President and General Manager Dublin. He is also the JAR 145 and 147 Accountable manager for FLS Aerospace (Irl). He holds an MBA from Dublin City University. He is a council member of the FAEI (Federation of Aerospace Enterprises in Ireland). Over the past 5 years he has worked in co-operation with Trinity College Dublin, and several European Partners to design and implement an innovative and practical approach to highlighting and reducing human error in the aircraft maintenance arena including the implementation of AMPOS (Aircraft Maintenance Procedures Optimisation System).

**Heike Roettgering**

Heike Roettgering is the Head of Consulting and Operational Training for Lufthansa Technical Training in Hamburg, Germany. With LTT she has had a variety of experiences and responsibilities including Technical Instructor, CBT Developer, Quality Manager over the past 15 years.

Ms. Roettgering holds degrees in Engineering and in Total Quality Management. Since 1998, she has managed or instructed in over 75 classes for Human Factors in Aviation Maintenance.



**Dr. Mark R. Rosekind**

Dr. Mark R. Rosekind is the President and Chief Scientist of Alertness Solutions. He is internationally recognized for translating scientific knowledge on sleep, circadian factors, human fatigue, performance, and alertness into practical strategies that improve safety and productivity in our 24-hr society. For over 20 years, Dr. Rosekind's research, publications, presentations, and practical applications have led to many significant changes in real-world settings. These accomplishments have been recognized through honors and awards that include the NASA Exceptional Service Medal, a Flight Safety Foundation Presidential Citation for "Outstanding Achievement in Safety Leadership," and a NASA Group Achievement Award. In 1999, Dr. Rosekind was a Fellow at the World Economic Forum in Davos, Switzerland and the recipient of the Business Aviation Meritorious Award presented by the Flight Safety Foundation.

While leading the Fatigue Countermeasures Program at the NASA Ames Research Center, Dr. Rosekind contributed to relevant applied research, accident investigation, aviation policy, and to many operational environments through education and other activities. For example, Dr. Rosekind led the team that showed the effectiveness of planned in-flight cockpit rest opportunities (the "NASA nap"). At the request of the National Transportation Safety Board (NTSB), he developed a structured approach to examining fatigue factors in accident investigations, which was applied in the investigation of a DC-8 aircraft accident.

Dr. Rosekind directed the efforts of an International Scientific Working Group that developed the first scientifically derived Principles and Guidelines for duty and rest scheduling in commercial aviation, which have been adapted by the Flight Safety Foundation for corporate aviation. Dr. Rosekind developed the most extensive and successful education and training program on fatigue countermeasures for aviation operations, which has been successfully transferred to organizations around the world. In collaboration with the NTSB, Dr. Rosekind was co-chair of the first multi-modal symposium, entitled "Managing Human Fatigue in Transportation." Dr. Rosekind has developed these types of activities in many diverse work settings.

Prior to his NASA work, Dr. Rosekind directed the Center for Human Sleep Research at the Stanford University Sleep Disorders Center. His academic credentials include an undergraduate degree with honors from Stanford University, his Ph.D. from Yale University, and postdoctoral training at Brown University.

Since founding Alertness Solutions, Dr. Rosekind has provided expertise to world-class organizations through a range of innovative activities. In addition, Dr. Rosekind has participated in activities with the Department of Transportation, provided testimony to the United States Senate and House of Representatives, and translated scientific knowledge for use in popular media. Using a collaborative and scientifically driven approach, Dr. Rosekind has facilitated the development and application of practical solutions and public policy to improve our society's safety, performance, and productivity.



**Captain (Select) John K. Schmidt, MSC, USN**

Captain (Select) Schmidt was born at FT Huachuca, Arizona, and grew up in northern New Jersey. He attended Washington and Lee University, Virginia, and upon graduation in 1981 was commissioned a Second Lieutenant through Army ROTC. He accepted a fellowship and was granted an educational delay to work on a doctorate in psychology at the University of Houston. During graduate school, he served as the 75th USA Maneuver Area Command Medical Exercise Group's Assistant S-1 and was promoted to First Lieutenant. After completing degree requirements in 1985, he was promoted to Captain and reported to the USA Academy of Health Sciences at FT Sam Houston, TX to attend the Medical Service Corps Officer Course.

His first active duty billet as a psychologist was at the USA Human Engineering Lab, Aberdeen Proving Ground, Maryland. During this tour he attended the USA School of Aviation Medicine Flight Surgeon Course at FT Rucker, AL, and subsequently worked on helicopter human factors issues. In 1989, he made an inter-service transfer to the US Navy and reported to NAS Pensacola, FL to attend the Naval Aerospace Medicine Institute's Naval Aerospace Experimental Psychology Course. His first Navy billet as a designated Naval Aerospace Experimental Psychologist was at the then Naval Air Development Center, Warminster, PA, where he worked as a project officer on crew and mission planning systems. After promotion to Lieutenant Commander in 1991, he assumed the duties as Human Factors Technology Branch Head and supervised crew system design research programs, a research laboratory facility, and staff of human factors engineers engineering psychologists.

En route to his next assignment in 1994, Captain (Select) Schmidt completed the Naval Postgraduate School Aviation Safety Officer Course. He then moved on to serve at the Naval Safety Center, Norfolk, VA as the Human Factors and aviation Psychology Branch Head. He assisted in the investigation/analysis of all aviation mishaps involving human

error and participated in over one hundred safety surveys. He also spearheaded a major initiative to identify human factor threats in Naval Aviation. He completed the Naval War College in 1997 and then reported to the School of Aviation Safety, Naval Postgraduate School, Monterey, CA. He was subsequently promoted to Commander and served as an Assistant Professor in the School of Aviation Safety, and held a joint appointment in the Operations Research Department. He instructed over one thousand safety and commanding officers on human factors issues in aviation, chaired over twenty masters theses, and taught several graduate human factors course. He also directed a major NASA/FAA research grant examining human error in aviation maintenance.

Captain (Select) Schmidt was hand picked to return to the Naval Safety Center as the Staff Psychologist and to head up special safety program initiatives. He retained an appointment as Assistant Professor at the Naval Postgraduate School and remains co-principle investigator on the NASA/FAA grant on human error in aviation maintenance. He has recorded over 800 hours of aircrew flight time in 17 different aircraft. His personal awards include the Meritorious Service Medal (three awards), Navy and Marine Corps Commendation Medal (two awards), Army Commendation Medal (two awards), Navy and Marine Corps Achievement Medal, Army Achievement Medal (two awards), and various other unit and service awards. He is a Licensed Professional Psychologist (LPP) and a Certified Human Factors Professional (CHFP).

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**John W. Stelly**

A native of Texas, John earned a BS in Mathematics from Tulane University and an MBA from the University of Houston. John joined Continental Airlines in 1985. He was deeply involved in the merger activity of the late 1980's. In this role he gained wide experience in Purchasing, Materials, Finance and Aircraft Maintenance. John's current position is Managing Director of Technology, supporting the Technical Operations Division. Recently, John led specific initiatives to: build and maintain a client/server based infrastructure supporting over 1,500 users; implement an Operational Data Store to gain access to legacy data; and develop an electronic document authoring and distribution system.

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**Leslie K. Vipond**

Leslie K. Vipond is currently at the Aircraft Maintenance Division, Flight Standards Service of the Federal Aviation Administration. His responsibilities encompass; Regulatory issues relating to personnel training and certification, Development of standards for turbine engines, propellers, non-destructive inspection, related aging aircraft issues, and in-flight icing issues, Development of Error Management and Mitigation Programs to action as a Sponsor of the FAA Aircraft Maintenance Human Factors and Aircraft Safety Program. Mr. Vipond brings expertise borne of 40 plus years in aviation as a pilot, maintenance technician and engineer. His experience within the FAA includes Research, Engineering, and Development, working as an Operations and Airworthiness Aviation Safety Inspector, and Safety Program Manager. Educational background includes Flight and maintenance training, a B.S. in Aerospace Engineering and an M.S. in Physics.

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**Jeffrey L. Wampler**


Jeffrey Wampler earned his B.S. in Human Factors Engineering (1986) and M.S. in Systems Engineering (1993) from Wright State University. He worked as a research engineer performing command and control training research from 1986-1990 for the Air Force Human Resources Laboratory. From 1990 to 1994 he was the lead Human Factors Engineer on the Integrated Maintenance Information System Research and Development effort and Air Force representative for the Tri-service Interactive Electronic Technical Manuals (IETM) specifications. From 1995 to 1998 he was the technical lead on the Design for Personnel, Training and Human Factors (DEPTH) research and development program. He is currently the government program manager of the Dual-Use Service Manual Generation Research Program at the Air Force Research Laboratory, Human Effectiveness Directorate (AFRL/HESS).

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**Jean Watson**

Jean is the Program Manager of the Federal Aviation Administration (FAA) Flight Standards Service, Aircraft Maintenance Division, Maintenance Technologies, Procedures and Maintenance Human Factors Safety Program. Ms. Watson is recognized as a subject matter expert and technical advisor in this area within the FAA and industry. She coordinates and collaborates with other government agencies such as NASA, EPA, Fish and Wildlife, USDA, OSHA, and CDC on various issues.

Prior to joining Flight Standards Service in November 2001, Jean was the Program Manager for the Federal Aviation

Administration's Aviation Maintenance and Inspection Human Factors Research Program (1994-2001). In this capacity, she developed and managed, through the years, over 30 University Grants and contracts. Prior to becoming the Program Manager, Jean served as the Senior Analyst and Technical Officer for the FAA's Aviation Maintenance and Inspection Human Factors Research Program since its inception in 1988. Over the years, Jean has co-organized and facilitated several workshops with the National Transportation Safety Board on Aviation Maintenance Human Factors in addition to collaborating with other national and international regulatory authorities. Jean has been the FAA's organizer of the Aviation Maintenance Human Factors symposium since its start in 1988.

Jean is currently a member of the FAA's Airliner Cabin Environment Response Team (ACERT) representing the FAA's Flight Standards Service, Aircraft Maintenance Division at the request of the FAA's Federal Air Surgeon.

She is also a Member and Technical Advisor on the FAA/Occupational Safety and Health Administration (OSHA) Aviation Safety and Health Team (1999-present).

Currently she also serves as the FAA's Regulation and Certification (AVR) Occupational Health and Safety Representative to the Associate Administrator for AVR. In this capacity she plans, directs, and implements AVR policy and guidance on Occupational Health and Safety initiatives for approximately 6,000 employees within the operational services of AVR.

Jean served as one of FAA's original Members to the International Civil Aviation Organization (ICAO) Flight Safety and Human Factors Study Group since the groups' inception (1988-1997). The study groups' charter is to improve safety in aviation by making member States (countries) more aware and responsive to the importance of human factors in civil aviation operations through practical human factors material and measures developed on the basis of experience in member States. The study group developed 13 digests on a variety of human factors topics such as Fundamental Human Factors Concepts to Human Factors in Aviation Maintenance. Jean was the co-developer of the FAA's first Knowledge Management System, which has since been implemented in several FAA organizations.

Jean also served as a representative on the Department of Transportation and Federal Aviation Administration on the Presidential Commission of the US Government interagency working group on emerging and re-emerging infectious disease (1994-1996). Jean was one of the original members' of the FAA's Aging Fleet Evaluation Program of FAR Part 121 and FAR 135 air carriers. (1988-1991). She received a Superior Accomplishment Award for the direct and positive contributions to the success of the FAA's Aging Fleet Evaluation Program.

Past accomplishments include representing the Department of Transportation on the President's Commission for the Study of Ethical Problems in Medicine, Biomedical and Behavioral Research, Federal Coordination Council for Science, Engineering and Technology, Interagency Human Subjects Coordinating Committee to develop and implement the Federal Policy on the Protection of Human Research Subjects (1987-1991).

Jean has been the Recipient of: a Superior Accomplishment Award for co-development, management and execution of the Aviation Maintenance Human Factors Research Program and the direction, execution and development of the Human Factors Guide for Aviation Maintenance, Nomination for FAA Technology Transfer Award for development of computer-based job aid for the FAA Aviation Safety Inspectors, the FAA Distinguished Team Excellence Award in Systems Operations Program, the FAA Special Achievement Award for Planning and Executing the FAA/ICAO Global Human Factors Symposium, the FAA's Distinguished Star Award.

Jean is a Member of the Society of Engineering Maintenance Committee and participates as a member of an Air Transport Association (ATA) Subcommittee as well as several ATA Task Force Committees. Jean has earned: Certificate of Completion in Safety Management, Certification in Project Management, Certification in Managing Resources and Programs. She is a graduate of the University of Virginia.

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### **Brian Whitehead**



Brian is an ex "Halton brat" (Royal Air Force apprentice) who spent 18 years in the RAF, before leaving to join BOAC. He moved to Canada in 1974, and apart from a brief spell with the UK CAA, has worked there ever since. His maintenance experience includes large air carrier, business aviation, general aviation and bush operations. Brian has spent the last 20 years with the Canadian Department of Transport, where he currently holds the position of Chief, Policy Development, in the Aircraft Maintenance and Manufacturing Branch. His duties involve the development of new regulations, standards and procedures.

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